

Spinal Motion Restriction Guideline for Pre-Hospital Providers

Introduction

The position of the National Association of Emergency Medical Service Physicians and the American College of Surgeons Committee on Trauma regarding emergency medical services spinal motion restriction and the use of rigid longboards are based upon the belief that:

- Rigid longboards are commonly used to attempt to protect the spine from further injury during pre-hospital trauma transport. However, the benefit of using a rigid longboard is largely unproven.
- The rigid longboard can induce pain, patient agitation and respiratory compromise.
- The rigid longboard can decrease tissue perfusion at pressure points, leading to the development of pressure sores.
- Utilization of a rigid longboard during transport should be judicious so that the potential benefits outweigh the risks.
- Whether or not a rigid longboard is used, attention to spinal motion restriction among at-risk patients is paramount. These include application of a cervical collar, adequately securing the patient to a stretcher, minimizing the number of patient transfers and limiting movement and maintenance of inline, neutral positioning of the spine during transfers. **Rigid longboards should be used judiciously and are recommended only for extrication purposes**

Purpose

To provide a guideline that assists the identification of patients who warrant being transported in a cervical collar and at times a rigid longboard to provide spinal motion restriction. Emergency medical services providers should use history and exam findings that indicate higher risk of spine injury to trigger the use of techniques for spinal motion restriction. **The use of the rigid longboard is not required to provide spinal motion restriction, particularly in patients with normal mental status and no injuries that limit mobility.**

Steps for Initiating Spinal Motion Restriction (The rigid longboard is not required to provide adequate spinal motion restriction) Adequate spinal motion restriction may be achieved by:

- **Application of a properly fitted cervical collar.**
- Supine positioning.
- Minimal movement/transfers.
- Maintaining inline stabilization during necessary movement or transfers. **(Spinal motion restriction may require more individuals for patient transfers when a rigid longboard is not used).**
- Pediatric consideration: padding under shoulders to maintain airway and neutral spine alignment in order to accommodate the child's larger occiput.
- Adult consideration: padding under the head to maintain airway and neutral spine alignment in order to accommodate the adult's larger thorax, particularly among obese patients.

Note: Guidelines do not apply to patients sustaining penetrating trauma unless spinal involvement is suspected.

Patients Warranting Spinal Motion Restriction

- Poor communication (altered level of consciousness; pediatric patient; language barrier; unreliable interaction).
- Signs (physical exam findings) or symptoms (complaints) of a neurologic deficit.
- Cervical, thoracic or lumbar pain or tenderness.
- High risk mechanism (for example: axial load; sudden deceleration; lateral force bend; penetrating with spine involvement).

References:

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3. Bouland A, Jenkins J, Levy, M (2013). Assessing attitudes toward spinal immobilization. *The Journal of Emergency Medicine*, 45, 4, 117-125.
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5. Haut E, Kalish B et al (2010). Spine Immobilization in Penetrating Trauma: more Harm than good? *Journal of Trauma and Acute Care Surgery*, 68, 1, 115-121
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7. Advanced Trauma Life Support; 10th Edition; 2018

Approved by COTS Board: 08/26/2014; 2/26/2019